REMARKS

Claims 1-7 are pending in this application.

By this Amendment, claims 1, 3 and 5 are amended to positively recite method steps as previously implied. Claim 8 is added. No new matter is added. Reconsideration of the application is respectfully requested.

Applicants thank Examiner Xu for the courtesy extended to Applicants' representative, Mr. Luo, during the November 12, 2008 personal interview. The substance of the personal interview is incorporated in the following remarks.

I. §112 and §101 Rejections

The Office Action rejects claims 1-7 under 35 U.S.C. §112 and §101. These rejections are respectfully traversed.

In particular, the Office Action asserts that, although claims 1 and 3 are phrased as method claims, they do not recite concrete steps of a method. Claims 1, 3 and 5 are amended, as outlined above, to positively recite method steps, as the Examiner requested. Accordingly, withdrawal of the §112 and §101 rejections of claims 1-7 is respectfully requested.

II. Double Patenting Rejections

The Office Action rejects claim 1 on the ground of non-statutory obviousness-type double patenting over claims 1-9 of U.S. Patent No. 7,132,066 in view of WO 03/048073 to Otsuka et al. (referring to the U.S. equivalent, U.S. Patent No. 7,208,108); and provisionally rejects claims 1 and 2 on the ground of non-statutory obviousness-type double patenting over claims 1-10 and 13 of Copending Application No. 10/717,502 in view of Otsuka.

A Terminal Disclaimer is concurrently filed herewith to overcome the double patenting rejections. Accordingly, withdrawal of the double patenting rejections is respectfully requested.

III. §102(e) Rejection

The Office Action rejects claims 1, 2 and 6 under 35 U.S.C. §102(e) over U.S. Patent Publication No. 2004/0115392 to Miyakawa et al. This rejection is improper.

Miyakawa has a U.S. filing date of November 21, 2003, which is later than the September 30, 2003 priority document of the present application. Thus, Miyakawa does not qualify as a priority reference.

An accurate translation of the priority document JP2003-339743 is submitted herewith to perfect the claim for foreign priority. Accordingly, withdrawal of the rejection of claims 1, 2 and 6 under 35 U.S.C. §102(e) is respectfully requested.

IV. §102(b) Rejection

The Office Action rejects claims 6 and 7 under 35 U.S.C. §102(b) over U.S. Patent Publication No. 2003/0057581 to Lu. This rejection is respectfully traversed.

In particular, the Office Action asserts that claims 6 and 7 are product-by-process claims. Thus, the Office Action appears to ignore the features recited in the method claims 1 and 3, asserting that the method steps do not result in structural differences.

However, the method recited in claims 1 and 3 results in structural differences in the honeycomb structure recited in claims 6 and 7. See the description in the specification at, for example, paragraph [0014]. Such structural differences must be considered when examining claims 6 and 7. See MPEP §2113, second paragraph.

Lu does not disclose or render obvious the structural features recited in claims 6 and 7 that are resulted from the method steps recited in claims 1 and 3. Thus, withdrawal of the rejection of claims 6 and 7 under 35 U.S.C. §102(b) is respectfully requested.

V. §103(a) Rejection

The Office Action rejects claims 1-7 under 35 U.S.C. §103(a) over U.S. Patent No. 4,851,376 to Asami et al. in view of Otsuka. This rejection is respectfully traversed.

A. The Asserted Combination of Asami and Otsuka is Unreasonable

The Office Action asserts that Asami discloses all features recited in claims 1 and 3, except for "a silicon carbide based honeycomb structure." However, the Office Action asserts that Otsuka discloses using silicon carbide to make honeycomb structures. Thus, the Office Action asserts that the combination of Asami and Otsuka renders obvious the subject matter recited in claims 1 and 3.

It appears that the Office Action is asserting that reclaimed cordierite compositions and recycled silicon carbide are mutually exchangeable materials, in that any teaching specifically related to one could be automatically applied to the other. However, such an assumption is unreasonable for at least the following two reasons.

i. Operations of Cordierite and Silicon Carbide are Different

First, in case of Asami, it is proposed to employ reclaimed cordierite compositions merely to achieve economical production or reduced material cost of the cordierite ceramic products (see Asami, column 2, lines 15-20). On the other hand, in case of the present application, it is proposed to employ the recycled raw material from a recovered material generated in a process of producing a silicon carbide base honeycomb structure in order to obtain excellent strength and uniform thermal conductivity by inhibiting cohesion of the silicon carbide powder and the metal silicon powder in the raw material and enhancing dispersibility of the raw material (see page 3, paragraph [0010]). Thus, the reclaimed cordierite compositions of Asami aim to solve a different problem than those disclosed in the present application.

In particular, in a common method of manufacturing a cordierite ceramic body, mineral substances such as alumina, talc and the like are mixed, and the thus obtained mixture is fired to obtain cordierite crystal phase. When reclaimed material of the cordierite ceramic body (i.e., pulverized raw material) is used in the above mentioned method, the

crystal phase of Proto-enstatite is likely to appear in the process of firing at around 1300°C due to high reaction activity. In addition, this phenomenon is likely to occur particularly when grains of reclaimed material are in small sizes. When the temperature rises up to around 1400°C, the Proto-enstatite phase disappears, and thereby only the cordierite crystal phase is obtained eventually. However, it is to be noted that when the appearance of Proto-enstatite phase is seen widely during the firing step, the number of microcrack changes as well as cordierite crystal phase orientation as a final crystal phase changes, and consequently thermal expansion coefficient changes eventually.

In contrast, as to silicon carbide, there is no such crystal phase like, for example, Proto-enstatite in the middle of the firing process. Therefore, only SiC crystal phase is present all through the firing process, and thereby, the above-mentioned problem does not occur.

Thus, Asami (cordierite) and Otsuka (silicon carbide) are not combinable because the operations of cordierite and silicon carbide are different.

ii. Asami Discourages Use of Cordierite

Second, Asami discloses that it is not preferable to use mere reclaimed cordierite compositions, because, as starting materials, reclaimed cordierite compositions are not satisfactory for producing cordierite ceramic products having low thermal expansion properties. In particular, Asami discloses that reclaimed cordierite compositions tend to have a comparatively large fluctuation in their coefficient of thermal expansion (see col. 2, lines 20-28). In order to solve this problem, Asami proposed to formulate the starting material so that a reaction ratio R of the cordierite batch composition of the starting material is 0.3 or less (see col. 3, lines 4-19). So, according to Asami, one cannot just use reclaimed cordierite composition to solve the problem disclosed in the present specification without causing

adverse effects (i.e., a comparatively large fluctuation in coefficient of thermal expansion). Thus, Asami appears to teach away from using recycled material in this aspect.

In contrast, in case of the present application, just using the recycled raw material is enough to obtain a silicon carbide base honeycomb structure having excellent strength and uniform thermal conductivity. Thus, the operation of the recovered material of the present application differs clearly from that of Asami's reclaimed cordierite compositions.

In view of the above, what is disclosed in Asami is a solution to a problem in the prior art regarding the claimed cordierite compositions. The solution involves a reaction factor equal or less than 0.3. This reaction factor is specifically for reclaimed cordierite compositions. There is no disclosure in Asami that such a reaction factor would also be applicable to silicon carbide. In fact, absent the reaction factor proposed in Asami, Asami teaches away from using reclaimed cordierite compositions.

In this regard, one of ordinary skill, when reading Asami in view of Otsuka, would have been taught away by Asami from using recycled silicon carbide; or would have focused on reclaimed cordierite compositions with the reaction factor proposed by Asumi. Asumi and Otsuka do not provide any reason for using recycling silicon carbide by independently researching and experimenting a possible "reaction factor" that might be applicable to recycled silicon carbide.

B. Asami Does Not Disclose the Size Feature of Claim 1

Regarding claim 1, Asami discloses an average diameter of about 50 mm. See col. 8, lines 12-19. The Office Action asserts that this size discloses the "average particle size of 10 to 300 μm" recited in claim 1. However, such an assertion is not reasonable, because 50 mm is beyond the size range recited in claim 1.

The Office Action may be asserting that Asami discloses an average particle diameter of 50 mm or less. (See the Office Action at page 8, paragraph [0003]). The Office Action

asserts that such an "or less" feature is disclosed in Asami at col. 10, lines 15-45. However, there is no such a "or less" disclosure at col. 10, lines 15-45 of Asami.

Even if Asami does disclose such an "or less" feature, such an "or less" feature does not disclose the recited particle size range. For example, paragraph [0035] and Table 4 of the specification disclose the criticality of the recited particle size range. In particular, as shown in Table 4, when the average particle size is in the recited 10-300 μm range (see examples 11-16), the "three point bending strength" reaches a superior value over 25.9 MPa. On the other hand, when the average particle size is over 300 μm (see comparative examples 5 and 6), the "three point bending strength" falls below an inferior value of 20.4 MPa. Thus, a general "or less" disclosure does not render obvious the critical size range recited in claim 1.

C. Summary

For at least the above reasons, withdrawal of the rejection of claims 1-7 under 35 U.S.C. §103(a) is respectfully requested.

Claim 8 is patentable at least in view of the patentability of claim 3, from which it depends, as well as for additional features it recites.

VI. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-7 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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JAO:GL/eks

Attachments:
Terminal Disclaimer
Translation of JP2003-339743

Date: December 23, 2008

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